## **Publications**

- 1. Olsen, R. C., C. E. McIlwain, and E. C. Whipple, Observations of Differential Charging Effects on ATS-6, <u>Journal of Geophysical Research</u>, <u>86</u>, 6809-6819, 1981.
- 2. Olsen, R. C., Modification of Spacecraft Potentials by Plasma Emission, <u>Journal of Spacecraft and</u> Rockets, 18, 462-469, 1981.
- 3. Olsen, R. C., Modification of Spacecraft Potentials by thermal Electron Emission on ATS-5, <u>Journal of Spacecraft and Rockets</u>, <u>18</u>, 527-532, 1981.
- 4. Olsen, R. C., Equatorially Trapped Plasma Populations, <u>Journal of Geophysical Research</u>, <u>86</u>, 11235-11245, 1981.
- 5. Olsen, R. C., Field-Aligned Ion Streams in the Earth's Midnight Region, <u>Journal of Geophysical</u> Research, 87, 2301-2310, 1982.
- 6. Olsen, R. C., The Hidden ion population of the Magnetosphere, <u>Journal of Geophysical Research</u>, <u>87</u>, 3481-3488, 1982.
- 7. Chappell, C. R., R. C. Olsen, J. L. Green, J. F. E. Johnson, and J. H. Waite, The discovery of nitrogen ions in the earth's magnetosphere, <u>Geophysical Research Letters</u>, <u>9</u>, 937-940, 1982.
- 8. Olsen, R. C., A threshold effect for spacecraft charging, <u>Journal of Geophysical Research</u>, <u>88</u>, 493-499, 1983.
- 9. Olsen, R. C., and C. K. Purvis, Observations of charging dynamics, <u>Journal of Geophysical Research</u>, <u>88</u>, 5657-5667, 1983.
- 10. Nagai, T., J. H. Waite, J. L. Green, C. R. Chappell, R. C. Olsen, and R. H. Comfort, First measurements of the supersonic polar wind in the polar magnetosphere, <u>Geophysical Research Letters</u>, <u>11</u>, 669-672, 1984.
- 11. Olsen, R. C., Experiments in charge control at geosynchronous orbit, ATS5 and ATS6, <u>Journal of Spacecraft and Rockets</u>, <u>22</u>, 254-264, 1985.
- 12. Olsen, R. C., C. R. Chappell, D. L. Gallagher, J. L. Green, D. A. Gurnett, The hidden ion population Revisited, <u>Journal of Geophysical Research</u>, <u>90</u>, 12121-12132, 1985.
- 13. Olsen, R. C., C. R. Chappell, J. Burch, Aperture plane potential control for thermal ion measurements, <u>Journal of Geophysical Research</u>, <u>91</u>, 3117, 1986.
- 14. Waite, J. H., D. L. Gallagher, M. O. Chandler, R. C. Olsen, R. H. Comfort, J. F. E. Johnson, C. R. Chappell, W. K. Petersen, D. Weimer, and S. D. Shawhan, Plasma and field observations of a PC 5 wave event, <u>Journal of Geophysical Research</u>, 91, 11147-11161, 1986.
- 15. Decreau, P. M. E., D. Carpenter, C. R. Chappell, R. H. Comfort, J. Green, R. C. Olsen, and J. H. Waite, Latitudinal plasma distribution in the dusk plasmaspheric bulge: Refilling phase and quasi-equilibrium state, Journal of Geophysical Research, 91, 6929-6943, 1986.
- 16. Olsen, R. C, T. L. Aggson and B. G. Ledley, Observations of electric fields near the plasmapause, <u>Journal of Geophysical Research</u>, <u>91</u>, 12017-12031, 1986.
- 17. Olsen, R. C., and C. R. Chappell, Conical ion distributions at one earth radius-Observations form the acceleration region?. <u>Advances in Space Research</u>, <u>6</u>, 117-120, 1986.
- 18. Olsen, R. C., S. D. Shawhan, D. L. Gallagher, J. L. Green, C. R. Chappell and R. R. Anderson, Plasma observations at the magnetic equator, Journal of Geophysical Research, 92, 2385-2407, 1987.
- 19. Nagai, T., H. J. Singer, B. G. Ledley, and R. C. Olsen, Field-aligned currents associated with substorms in the vicinity of synchronous orbit, 1. The July 5, 1979, substorm observed by SCATHA, GOES 3, and GOES 2, <u>Journal of Geophysical Research</u>, 92, 2425-2431, 1987.
- 20. Craven, P. D., R. C. Olsen, J. Fennell, D. Croley, and T. Aggson, Potential modulation on the SCATHA spacecraft, <u>Journal of Spacecraft and Rockets</u>, <u>24</u>, 150-157, 1987.
- 21. Olsen, R. C., The record charging events of ATS-6, <u>Journal of Spacecraft and Rockets</u>, <u>24</u>, 362-366, 1987.
- 22. Olsen, R. C., Electron beam experiments at high altitudes, <u>Journal of Electrostatics</u>, 20, 43-57, 1987.
- 23. Olsen, R. C., and E. C. Whipple, An Unusual Charging Event on ISEE-1, <u>Journal of Geophysical Research</u>, 93, 5568-5578, 1988.
- 24. Olsen, R. C., D. R. Lowery, and J. L. Roeder, Plasma Wave Observations during Electron Beam Experiments at High Altitudes, Journal of Geophysical Research, 94, 17267-17273, 1989.
- 25. Olsen, R. C., L. E. Weddle, and J. L. Roeder, Plasma Wave Observations during Ion Gun Experiments, Journal of Geophysical Research, 95, 7759-7771, 1990.
- 26. Olsen, R. C., and C. W. Norwood, Spacecraft generated ions, <u>Journal of Geophysical Research</u>, <u>96</u>, 15951-15962, 1991.

- 27. Olsen, R. C., Comment on "Theory and observation of triple-root jump in spacecraft charging" by S. T. Lai, <u>Journal of Geophysical Research</u>, <u>96</u>, 21411-21412, 1991.
- 28. Olsen, R. C., The density minimum at the Earth's magnetic equator, <u>Journal of Geophysical Research</u>, <u>97</u>, 1135-1150, 1992.
- 29. Olsen, R. C., R. R. Anderson, and F. S. Mozer, Plasma wave observations during electron gun experiments on ISEE-1, Advances in Space Research, 12, (12)29, 1992
- 30. Olsen, R. C., L. J. Scott, and S. A. Boardsen, On the consequences of bi-Maxwellian plasma distributions for parallel electric fields, <u>Journal of Geophysical Research</u>, 99, 2191-2203, 1994.
- 31. Riedler, W, K. Torkar, F. Rudenauer, M. Fehringer, A. Pedersen, R. Schmidt, R. J. L. Grard, H. Arends, B. T. Narheim, J. Troim, R. Torbert, R. C. Olsen, E. Whipple, R. Goldstein, N. Valavanogolu, and Jua Zhao, Active Spacecraft Potential Control, <u>Space Science Reviews</u>, 79, 271-302, 1997.

## **Technical Reports**

- Olsen, R. C., and E. C. Whipple, Active Experiments in Modifying Spacecraft Potential: Results from ATS-5 and ATS-6, Contract Report, NAS 5-23481.
- Olsen, R. C., R. H. Comfort, M. O. Chandler, T. E. Moore, J. H. Waite, Jr., D. L. Reasoner and A. P. Biddle, DE-1 RIMS Operational Characteristics, NASA Technical Memorandum, NASA TM-86527, October 1985.
- Olsen, R. C., Current Limiting Mechanisms in Electron and Ion Beam Experiments, NPS-61-89-013, Naval Postgraduate School, August 1989.
- Olsen, R. C., Charging Characteristics of Dynamics Explorer I Retarding Ion Mass Spectrometer and the Consequence for Core Plasma Measurements, NPS-61-89-014, Naval Postgraduate School, September 1989.
- Olsen, R. C., Proceedings of the Spacecraft Charging Technology Conference, held at the Naval Postgraduate School, Monterey, CA, 31 October 3 November 1989.

## **Conference Presentations**

- Olsen, R. C. and Elden Whipple, Signature of Spacecraft Differential Charging Effects in Magnetospheric Particle Data, EOS (abstracts), p. 983, 1976, Presented at the American Geophysical Union Meeting in San Francisco, December 1976.
- Olsen, R. C., Potential Modifications on ATS-5 by Electron Emission, EOS (abstract), p. 1215, 1977, Presented at the American Geophysical Union Meeting in San Francisco, December, 1977.
- Olsen, R. C., E. C. Whipple, and C. K. Purvis, Active Modification of ATS-5 and ATS-6 Spacecraft Potentials, Presented at the Ionospheric Effects Symposium, Washington, D.C., January, 1978.
- Olsen, R. C., Operation of the ATS-6 Ion Engine and Plasma Bridge Neutralizer at Geosynchronous Altitude, AIAA/DLGR 13th International Electric Propulsion Conference, paper 78-663, San Diego, California, April 1978.
- Olsen, R. C. and E. C. Whipple, Operations of the ATS-6 Ion Engine, USAF/NASA Spacecraft Charging Technology Conference, Colorado Springs, Colorado, October, 1978.
- Olsen, R. C., Effects of Operating a Cesium Ion Engine on Low Energy Particle Data, EOS (abstracts), p. 1159, 1978, Presented at the American Geophysical Union Meeting in San Francisco, December, 1978.
- Whipple, E. C., and R. C. Olsen, Experiments on Regulation of Electric Charge on Space Vehicles, AIAA 12th Fluid and Plasma Dynamics Conference, paper 79-1506, Williamsburg, Virginia, July, 1979.
- Olsen, R. C., Warm Ions at Midnight, EOS (abstract), p. 930, 1979, Presented at the American Geophysical Union Meeting in San Francisco, December, 1979.
- Olsen, R. C., Warm Ion Flows parallel to the Magnetic Field, EOS (abstracts), p. 343, 1980, Presented at the American Geophysical Union Meeting in Toronto, April, 1980.
- Olsen, R. C., Thermal Ions Trapped at the Equator, EOS (abstracts), p. 1091, 1980, Presented at the American Geophysical Union Meeting in San Francisco, December, 1980.
- Olsen, R. C., R. H. Comfort, C. R. Chappell, J. H. Waite, J. F. E. Johnson, and S. D. Shawhan, Dynamics Explorer low-energy plasma observations using a variable aperture bias, EOS (abstracts) p. 390, 1982, Presented at the American Geophysical
- Union Meeting in Philadelphia, May, 1982.

- Olsen, R. C., D. L. Gallagher, C. R. Chappell, J. L. Green, and S. D. Shawhan, A potential control method for thermal plasma measurements on the DE-1 spacecraft, presented at the 17th ESLAB Symposium on Spacecraft-Plasma Interactions and their Influence on Field and Particle Measurements, Noordwijk, The Netherlands, September 13-16, 1983.
- Olsen, R. C., P. M. E. Decreau, F. G. E. Johnson, G. L. Wrenn, A. Pedersen, and K. Knott, Comparison of thermal plasma observations on SCATHA and GEOS, presented at the 17th ESLAB Symposium on Spacecraft-Plasma Interactions and their Influence on Field and Particle Measurements, Noordwijk, The Netherlands, September 13-16, 1983.
- Pedersen, A., C. R. Chappell, K. Knott, and R. C. Olsen, Methods for keeping a conductive spacecraft near the plasma potential, presented at the 17th ESLAB Symposium on Spacecraft-Plasma Interactions and their Influence on Field and Particle Measurements, Noordwijk, The Netherlands, September 13-16, 1983.
- Whipple, E. C., R. C. Olsen, I. Krinsky, and R. Torbert, Anomalously high potentials observed on ISEE-1 in sunlight, presented at the 17th ESLAB Symposium on Spacecraft-Plasma Interactions and their Influence on Field and Particle Measurements, Noordwijk, The Netherlands, September 13-16, 1983.
- Olsen, R. C., D. L. Gallagher, S. D. Shawhan, and C. R. Chappell, Plasma heating at the equatorial Plasmapause, presented at the Conference on Fundamental Magnetospheric Processes in the Plasmapause Region, Huntsville, AL, October 25-27, 1983.
- Aggson, R. L., and R. C. Olsen, Observations of radial electric field at the plasmapause, presented at the Conference on Fundamental Magnetospheric Processes in the Plasmapause Region, Huntsville, AL, October 25-17, 1983.
- Krinsky, I. S., E. C. Whipple, R. B. Torbert, and R. C. Olsen, Anomalously high potentials observed on ISEE, EOS (abstracts), p. 808, 1983, Presented at the American Geophysical Union meeting in San Francisco, CA, December 5-9, 1983.
- Olsen, R. C., D. L. Gallagher, C. R. Chappell, J. L. Green, and S. D. Shawhan, The hidden ion population-Revisited, EOS (abstract), p. 256, 1984, Presented at the American Geophysical Union Meeting in Cincinnati, OH, May 14-17, 1984.
- Decreau, P. M. E., C. R. Chappell, J. L. Green, J. H. Waite, D. Gurnett, R. H. Comfort, R. C. Olsen, and A. Pedersen, A three-dimensional view of the plasmaspheric bulge: GEOS-2/DE-1 Comparisons, EOS (abstracts), p. 256, 1984, Presented at the American Geophysical Union meeting in Cincinnati, OH, May 14-17, 1984.
- Ledley, B. G., R. C. Olsen, and T. L. Aggson, Observation of D.C. electric fields near the plasmapause, EOS (abstracts), p. 256, 1984, Presented at the American Geophysical Union meeting in Cincinnati, OH, May 14-17, 1984.
- Moore, T. E., A. P. Biddle, C. R. Chappell, R. C. Olsen, and J. H. Waite, Thermal ion signatures of auroral acceleration processes, EOS (abstracts), p. 257, 1984, Presented at the American Geophysical Union meeting in Cincinnati, OH, May 14-17, 1984.
- Olsen, R. C., Recent results on wave-particle interactions as inferred from SCATHA, invited talk, presented a the XXIst General Assembly of International Union of Radio Science, Florence, Italy, August 28 September 5, 1984.
- Olsen, R. C., and C. R. Chappell, Observations on conical ion distributions at one Earth Radius Observations from the acceleration region?, EOS (abstracts), p. 1060, 1984, Presented at the American Geophysical Union meeting in San Francisco, CA, December 5-9, 1984.
- Craven, P. D., R. C. Olsen, and C. R. Chappell, Measurements of molecular ions at high altitudes over the polar cap, EOS (abstracts), p. 1021, 1984, Presented at the American Geophysical Union meeting in San Francisco, CA, December 5-9, 1984.
- Gallagher, D. L., R. C. Olsen, R. H. Comfort, J. H. Waite, C. R. Chappell, J. F. E. Johnson, D. Weimer, and S. D. Shawhan, A detailed analysis of the ion motions and electric field during a PC5 event, EOS (abstracts), p. 1046, 1984, presented at the American Geophysical Union Meeting in San Francisco, CA, December 5-9, 1984.
- Olsen, R. C., C. R. Chappell and D. A. Gurnett, Ion acceleration at the magnetic equator, presented at the Chapman Conference on Ion Acceleration in the Magnetosphere and Ionosphere, Boston, MA, June 3-7, 1985
- Olsen, R. C. and H. A. Cohen, Electron beam experiments at high altitudes, EOS (abstracts), p. 1053, 1985, presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA, December 9-13, 1985.

- Olsen, R. C., Electron beam experiments at high altitudes, presented to the NATO/AGARD meeting of the Electromagnetic Wave Propagation Panel, and the symposium on "The aerospace environment at high altitudes and its implication for spacecraft charging and communications," The Hague, The Netherlands, 2-6 June 1986.
- Olsen, R. C., and C. R. Chappell, Conical ion distributions near one earth radius, presented at the XXVI Plenary meeting of the Committee on Space Research (COSPAR). Toulouse, France, 30 June 11 July, 1986 (Published, Adv. Space Res., 1986).
- Olsen, R. C., and H. A. Cohen, Electron beam experiments at high altitudes, presented at the XXVI Plenary meeting of the Committee on Space Research (COSPAR), Toulouse, France, 30 June 11 July, 1986.
- Olsen, R. C., C. R. Chappell, and S. D. Shawhan, Plasma observations at the earth's magnetic equator, presented at the International Symposium on Space Physics, Beijing, China, November 10-14, 1986.
- Olsen, R. C., Ion beam experiments at high altitudes, EOS (Abstracts), p. 1180, 1986, presented at the Fall meeting of the American Geophysical Union, San Francisco, CA, December 8-12, 1986.
- Norwood, C. W., R. C. Olsen and W. W. Li, Observations of ions generated on or near satellite surfaces, paper AIAA-88-0434, presented at the AIAA-26th Aerospace Sciences Meeting, Reno, Nevada, January 11-14, 1988.
- Olsen, R. C., D. R. Lowery, and L. E. Weddle, Plasma wave observations during electron and ion gun experiments, paper AIAA-88-0433, presented at the AIAA 26th Aerospace Sciences Meeting, Reno, Nevada, January 11-14, 1988.
- Olsen, R. C., A hollow cathode rocket experiment, presented at the AIAA 27th Aerospace Sciences Meeting, Reno, NV, 09-12 January 1989.
- Olsen, R. C., J. W. Patterson, T. L. Aggson, and B. G. Ledley, Observations of resonance phenomenon in a micropulsation, EOS, 70, 453, 1989, Presented at the American Geophysical Union Meeting in Baltimore, MD, May 1989.
- Olsen, R. C., Interactions between spacecraft, ion propulsion systems, and the Environment, Presented at the INTELSAT Symposium on ion propulsion for communications satellites, in Monterey, CA, 13 July 1989. Invited talk.
- Olsen, R. C., J. W. Patterson, T. L. Aggson, and B. G. Ledley, Multipoint observations of a micropulsation, IAGA Bulletin, 53, 446, 1989, Presented at the 6th Scientific Assembly of IUGG/IAGA, 03 August 1989, Exeter, United Kingdom.
- Anderson, R. R., R. C. Olsen, and F. S. Mozer, Plasma wave observations during electron gun operations on ISEE 1, EOS, 70, 1279, 1989, Presented at the American Geophysical Union Meeting in San Francisco, CA December 1989.
- Olsen, R. C., R. Anderson, and F. S. Mozer, Plasma wave observations during electron gun experiments on ISEE 1, Presented at the XXVIII Plenary meeting of the Committee on Space Research (COSPAR), The Hague, The Netherlands, 25 June 6 July 1990.
- Olsen, R. C., T. Van Horn, R. B. Torbert, and W. J. Raitt, SPEAR-1 Charging Behavior, presented at the ESA Space Environment Analysis Workshop, Noordwijk, the Netherlands, 9-12 October 1990.
- Olsen, R. C., Equatorial phenomena in plasmasphere filling, presented at the Workshop on Plasmasphere Refilling, (invited talk), in Huntsville, AL, 15-16 October 1990.
- Olsen, R. C., Electron heating at the plasmasphere/plasmasheet boundary, EOS, 71, p. 1522, 1990, presented at the Fall meeting of the American Geophysical Union, San Francisco, CA, December 3, 1990.
- Olsen, R. C., The density minimum at the Earth's magnetic equator, EOS, 72, p. 235, 1991, presented at the Spring meeting of the American Geophysical Union, Baltimore, MD, May 28, 1991.
- Olsen, R. C., and L. J. Scott, Equatorially trapped plasmas and parallel electric fields, presented at the Fall meeting of the American Geophysical Union, San Francisco, CA, Dec 9, 1991.
- Olsen, R. C., J. E. McCoy, M. D. Grossi, J. A. Carroll, M. Dobrowolny, . J. Jost, High Current Electrodynamic Tether Investigations by the PMG experiment, presented at the Fall Meeting of the American Geophysical Union, San Francisco, CA, 9 December 1993.
- Collins, B. H., R. C. Olsen, J. Hackwell, Thermal Imagery Spectral Analysis, presented at the SPIE 1997 Annual International Symposium on Optical Science, Engineering, and Instrumentation, San Diego, CA, 28-30 July 1997.
- Olsen, R. C., S. Bergman, R. G. Resmini, "Target Detection in a Forest Environment using Spectral Imagery," presented at the SPIE 1997 Annual International Symposium on Optical Science, Engineering, and Instrumentation, San Diego, CA, 28-30 July 1997.

- J. S. Tyo, D. I. Diersen, and R. C. Olsen, Development of an Invariant Display Strategy for Spectral Imagery, SPIE, vol. 4132, Imaging Spectrometry VI, M. R. Descour and S. S. Shen, Eds., pp. 147-156, SPIE, Bellingham, WA, 2000
- J. S. Tyo, J. C. Robertson, J. Wollenbecker, and R. C. Olsen, Target Spectral Statistics in HSI Scenes, SPIE, vol. 4132, Imaging Spectrometry VI, M.R. Descour and S. S. Shen, Eds., pp. 306-314, SPIE, Bellingham, WA, 2000

## **Conference Proceedings**

- Olsen, R. C., E. C. Whipple, and C. K. Purvis, Active Modification of ATS-5 and ATS-6 Spacecraft Potentials, Effects of the Ionosphere on Space and Terrestrial Systems, ed. John Goodman, NRL and ONR, 1978.
- Olsen, R. C., and E. C. Whipple, Operations of the ATS-6 Ion Engine, in Spacecraft Charging Technology 1978, edited by Robert C. Finke and Charles P. Pike, NASA Conference Publication 2071, AFGL-TR-79-0082, 1979.
- Olsen, R. C., D. L. Gallagher, C. R. Chappell, J. L. Green, and S. D. Shawhan, A potential control method for thermal plasma measurements on the DE-1 spacecraft, proceedings of the 17th ESLAB Symposium on Spacecraft-Plasma Interactions and their Influence on Field and Particle Measurements, Noordwijk, The Netherlands, September 13-16, 1983, edited by A. Pedersen, ESA Sp-198, p. 177-184, December, 1983. Olsen, R. C., P. M. E. Decreau, J. F. E. Johnson, G. L. Wrenn, A. Pedersen, and K. Knott, Comparison of thermal plasma observations on SCATHA and GEOS, proceedings of the 17th ESLAB Symposium on Spacecraft-Plasma Interactions and their Influence on Field and Particle Measurements, Noordwijk, The Netherlands, September 13-16, 1983, edited by A. Pedersen, ESA SP-198, p. 57-61, December, 1983. Pedersen, A., C. R. Chappell, K. Knott, and R. C. Olsen, Methods for keeping a conductive spacecraft near the plasma potential, proceedings of the 17th ESLAB Symposium on Spacecraft-Plasma Interactions and their Influence on Field and Particle Measurements, Noordwijk, The Netherlands, September 13-16, 1983, edited by A. Pedersen, ESA SP-198, p. 185-190, December, 1983.
- Whipple, E. C., R. C. Olsen, I. Krinsky, and R. Torbert, Anomalously high potentials observed on ISEE-1 in sunlight, proceedings of the 17th ESLAB Symposium on Spacecraft-Plasma Interactions and their Influence on Field and Particle Measurements, Noordwijk, The Netherlands, September 13-16, 1983, edited by A. Pedersen, ESA SP-198, p. 35-40, December, 1983.
- Olsen, R. C., C. R. Chappell, and S. D. Shawhan, Plasma observations at the earth's magnetic equator, proceedings of the International Symposium on Space Physics, Beijing, China, November 10-14, 1986, page 4-023, 1986.
- Whipple, E. C., and R. C. Olsen, High Spacecraft potentials on ISEE-1, presented to the NATO/AGARD meeting of the electromagnetic wave propagation panel, and the symposium on "The aerospace environment at high altitudes and its implication for spacecraft charging and communications", the Hague, The Netherlands, 2-6 June 1986, AGARD-CP-406, pages 8-1 to 8-10, 1987.
- Olsen, R. C., Electron beam experiments at high altitudes, presented to the NATO/AGARD meeting of the Electromagnetic Wave Propagation Panel, and the symposium on "The aerospace environment at high altitudes and its implication for spacecraft charging and communications", The Hague, The Netherlands, 2-6 June 1986. AGARD-CP-406, pages 10-1 to 10-8, 1987.
- Olsen, R. C., Hollow cathode rocket experiment, Presented at the Piano Spaziale Nazionale (PSN)/AIAA conference, Space Tethers for Science in the Space Station Era, Venice, Italy, 4-8 October 1987, Societa Italiana di Fisica, Conference Proceedings, Volume 14, Edited by Luciano Guerriero and Ivan Bekey, Published in Bologna, Italy, 1988.
- Olsen, R. C. and G. C. Thompson, VLF Space transmitter, Presented at the Third International Conference on Tethers in Space Towards Flight, San Francisco, CA, 17-19 May 1989, Tethers in Space Towards Flight, AIAA, Washington, DC., pp. 274-279, 1989.
- Olsen, R. C., Current limiting mechanisms in electron and ion beam experiments, in Current Collection from Space Plasmas, NASA Conference Publication 3089, pages 276-304, 1990.
- Olsen, R. C., T. Van Horn, R. B. Torbert, and W. J. Raitt, SPEAR-1 Charging Behavior, in the Proceedings of The ESA Space Environment Analysis Workshop, section 4.7, held in Noordwijk, the Netherlands, 9-12 October 1990, publication WPP-23.

Robson, R. R., W. S. Williamson, R.C. Olsen, and T. E. Moore, Plasma Contactor for the ISTP/Polar Spacecraft, AIDAAAIAA/DGLR/JSASS 22<sup>nd</sup> International Electric Propulsion Conference, Oct. 14-17, 1991, Viareggio, Italy, IEPC-91-065.

Sturgeon, M. A., L.-J. Cheng, P. A. Durkee, M. K. Hamilton, J. F. Huth, J. C. Mahoney, R. C. Olsen, G. F. Reyes, Spectral and polarimetric analysis of hyperspectral data collected by an acousto-optic tunable filter system, *Algorithms for Multispectral and Hyperspectral Imagery, SPIE Proceedings Volume 2231*, pp. 167-176, 1994.